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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,075	06/25/2003	Martin Paul Cohen	DN2003108	4254
27280	7590	12/30/2005	EXAMINER	
THE GOODYEAR TIRE & RUBBER COMPANY INTELLECTUAL PROPERTY DEPARTMENT 823 1144 EAST MARKET STREET AKRON, OH 44316-0001			ANTHONY, JOSEPH DAVID	
			ART UNIT	PAPER NUMBER
			1714	

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/606,075

Applicant(s)

COHEN, MARTIN PAUL

Examiner

Joseph D. Anthony

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 5-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-4, drawn to a process of preparing a composite and the composite made thereof, classified in class 252, subclass 183.11.
  - II. Claims 5-20, drawn to a method of preparing a rubber composition and the rubber composition made thereof, classified in class 524, subclass 492.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as mutually exclusive invention in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product, and the inventions are patentably distinct. In the instant case, the intermediate product is deemed to be useful as filler materials for polymer that do not contain or are not made from conjugated diene elastomers, and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

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3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Henry C. Young, Jr. on 11/30/05 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-4. Affirmation of this election must be made by applicant in replying to this Office action. Claims 5-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claim 1 is indefinite in regards to the metes and bounds of the scope of the blocked mercaptoalkoxysilane compounds of the listed formulas because the subscript "j" is defined as being: "is 0 to 1" and "preferably from 1 through 4".

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-4 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Okel U.S. Patent Number 6,649,684.

Okel teaches fillers, e.g., inorganic oxides, preferably precipitated silica, that have been chemically treated to have a carbon content of greater than 1 weight percent, a mercapto content of at least 0.15 weight percent, a Silane Conversion Index of at least 0.3 and a Standard Reinforcement Index of 4 or more. Polymeric compositions that contain such treated fillers are also described, see abstract, column 3, line 51 to column 4, line 60 and column 7, line 59 to column 8, line 10. The chemical treated inorganic oxides, such as precipitated silica, are made by a process of reacting the metal oxide with a mercaptoorganometallic compound which may be a blocked mercaptoalkoxysilane compound, see column 8, line 65 to column 9, line 57, and a non-sulfur organometallic compound, such as alkylsilane, see column 9, line 58 to column 11, line 19. Examples 1-9 teach reacting precipitated silica in a sequential order of reacting the precipitated silica with the 3-mercaptopropyltrimethoxysilane (MPTMS) followed by reacting said reaction product with dimethyldichlorosilane (DMDCS). Examples 10-14 teach reacting precipitated silica with a commixture of (MPTMS) and (DMDCS).

Applicant's invention is deemed to be anticipated over the clear teaching of Okel to the use of blocked mercaptoalkoxysilane reactants. In the alternative,

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applicant's invention can be said to "differ" from Okel invention only in that there is not a specific example which actually uses a blocked mercaptoalkoxysilane reactant. It would have been obvious to one having ordinary skill in the art to use the broad disclosure of the above-cited patent sections as strong motivation to actually use a blocked mercaptoalkoxysilane reactant in lieu of the non-blocked mercaptoalkoxysilane which were used in the said examples.

11. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al. U.S. Patent Number 6,573,324 or Wagner U.S. Patent Number 4,474,908 both patents individually in view of either Cruse et al. U.S. Patent Number 6,127,468 or Cruse et al. U.S. Patent Number 6,414,061.

Cohen et al. teach a tire having at least one component comprised of a rubber composition which contains pre-hydrophobated precipitated silica aggregates. Such tire component may be, for example although not limited to, a tire tread, sidewalls and/or sidewall insert. Such pre-hydrophobated precipitated silica aggregates are contemplated as being prepared, for example, by treatment of a colloidal silica with a combination of both an organomercaptosilane and an alkylsilane, see abstract, and column line 50 to column 3, line 62. Cohen et al differs from applicant's claimed invention in that the organomercaptosilane reactants directly disclosed are non-blocked organomercaptosilanes.

Wagner teaches the abrasion resistance of siliceous filler, preferably precipitated silica, reinforced rubber vulcanizates is improved by adding to the

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unvulcanized rubber composition silane coupling agent comprising a mixture of a mercaptosilane, such as mercaptopropyltrimethoxysilane, and an alkyl alkoxysilane, such as methyltrimethoxysilane. The mercaptosilane is present in amounts of between 0.3 and 15 parts per hundred parts of rubber, and the weight ratio of mercaptosilane to alkyl alkoxysilane is between 0.15:1 and 15:1. Preferably, the silanes in a ratio of about 1:1 are admixed with a hydrocarbon process oil and the oil-silane mixture added to the siliceous filler-rubber mixture, see abstract, column 1, line 43 to column 2, line 34, column. The silane coupling agent can be pre-reacted with the precipitated silica filler prior to its addition to the polymer, see column 2, lines 63 to column 3, line 65 and column 4, lines 48-40. Wagner differs from applicant's claimed invention in that the mercaptopropyltrimethoxysilane reactants directly disclosed are non-blocked mercaptopropyltrimethoxysilane.

Cruse et al. '468 teach the use of novel blocked mercaptosilanes, wherein the hydrogen atom of the mercaptan functionality has been substituted, in filled polymers. The blocked mercaptosilanes described are unique in that they allow the mixing of fillers with organic polymers to proceed while remaining inert toward coupling to the polymer. The coupling reactions of these blocked mercaptosilicon compounds are triggered by addition of an appropriate deblocking agent, which preferably is tetramethylthiuram monosulfide, see abstract. Cruse et al. directly discloses that said blocked mercaptosilanes can be pre-reacted with particulate silica filler before being added to the polymer, see column 5, lines 13-57, column 8, lines 56-62 and column 9, lines 3-15.



Cruse et al. '061 teach novel blocked mercaptosilanes wherein the hydrogen atom of the mercaptan functionality has been substituted. The invention includes methods of preparation for the blocked mercaptosilicon compounds as well as their use in filled rubbers. The blocked mercaptosilanes described are unique in that they allow the mixing of fillers with organic polymers to proceed while remaining inert toward coupling to the polymer. The coupling reactions of these blocked mercaptosilicon compounds are triggered by addition of an appropriate deblocking agent, see abstract, column 2, line 30 to column 6, line 8. Cruse et al. directly discloses that said blocked mercaptosilanes can be pre-reacted with particulate silica filler before being added to the polymer, see column 6, lines 9-13, and column 16, lines 3-15.

It would have been obvious to one having ordinary skill in the art to use the directly teachings of either Cruse et al '468 or Cruse et al. '061 to pre-treating precipitated silica with blocked mercaptosilanes as strong motivation to actually use blocked mercaptosilane reactants in the process of pre-treating precipitated silicas taught by Cohen et al and Wagner for the benefits that such blocked mercaptosilanes convey to the final polymeric composition when said treated precipitated silica filler is added to such polymeric compositions.

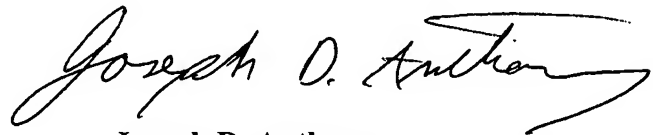
***Prior-Art Cited But Not Applied***

12. Any prior-art reference which is cited on FORM PTO-892 but not applied, is cited only to show the general state of the prior-art at the time of applicant's invention.

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***Examiner Information***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Joseph D. Anthony whose telephone number is (571) 272-1117. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (571) 272-1119. The centralized FAX machine number is (571) 273-8300. All other papers received by FAX will be treated as Official communications and cannot be immediately handled by the Examiner.



**Joseph D. Anthony**  
**Primary Patent Examiner**  
**Art Unit 1714**

12/4/05